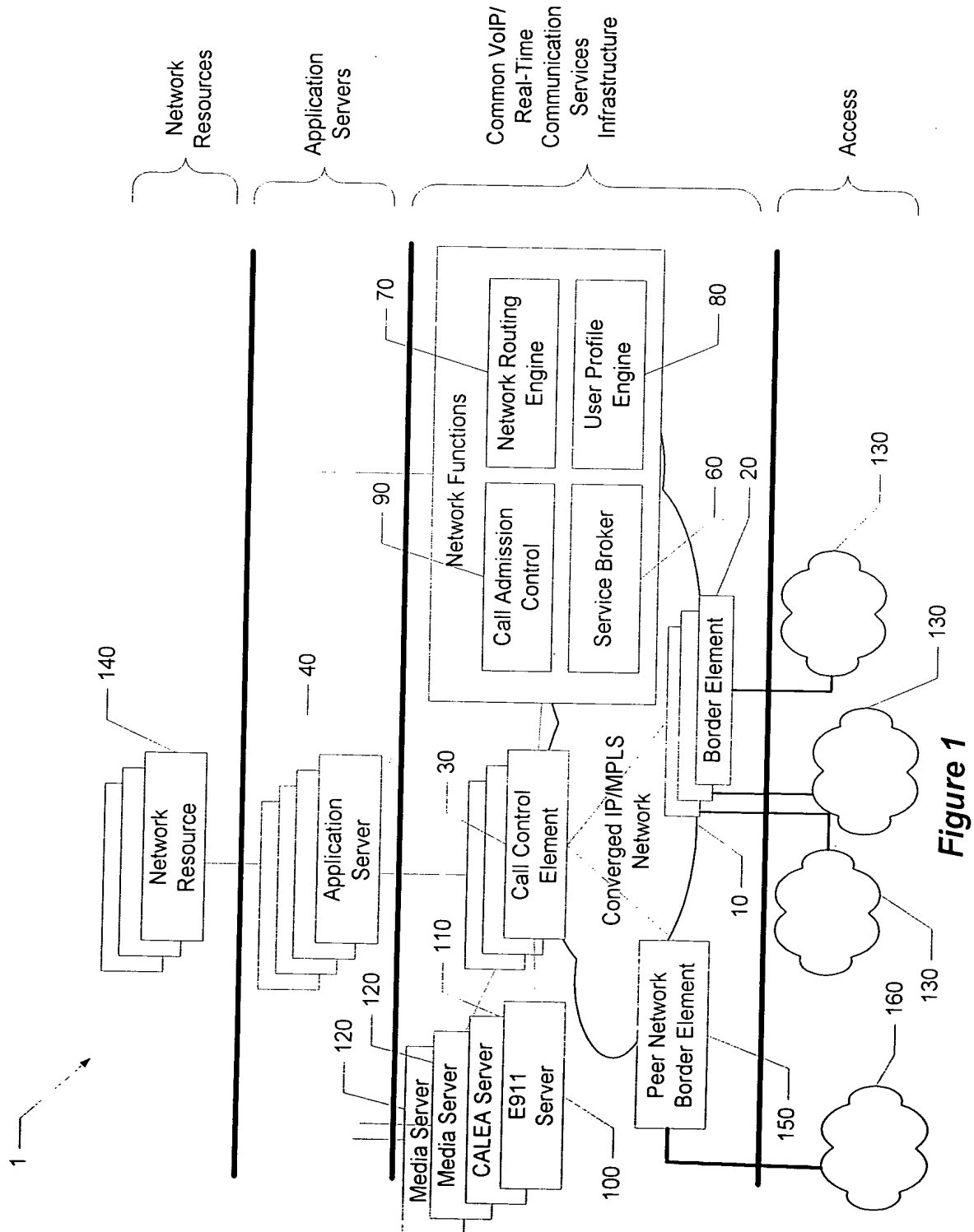AN ACCESS INDEPENDENT COMMON ARCHITECTURE FOR REAL-TIME
COMMUNICATIONS SERVICES FOR NETWORKING ENVIRONMENTS
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Network Resources

Application Servers

Common VoIP/ Real-Time Communication Services Infrastructure

Access

Network Functions

Network Routing Engine — 70

User Profile Engine — 80

Call Admission Control — 90

Service Broker

— 60
— 20

Border Element — 130

Network Resource — 140

Application Server — 40

Call Control Element — 30

Converged IP/MPLS Network

— 10

Media Server — 120
Media Server — 120
CALEA Server — 110
E911 Server

Peer Network Border Element — 100

— 150
— 160
— 130
— 130

Figure 1

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Figure 2

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Figure 3

AN ACCESS INDEPENDENT COMMON ARCHITECTURE FOR REAL-TIME
COMMUNICATIONS SERVICES FOR NETWORKING ENVIRONMENTS
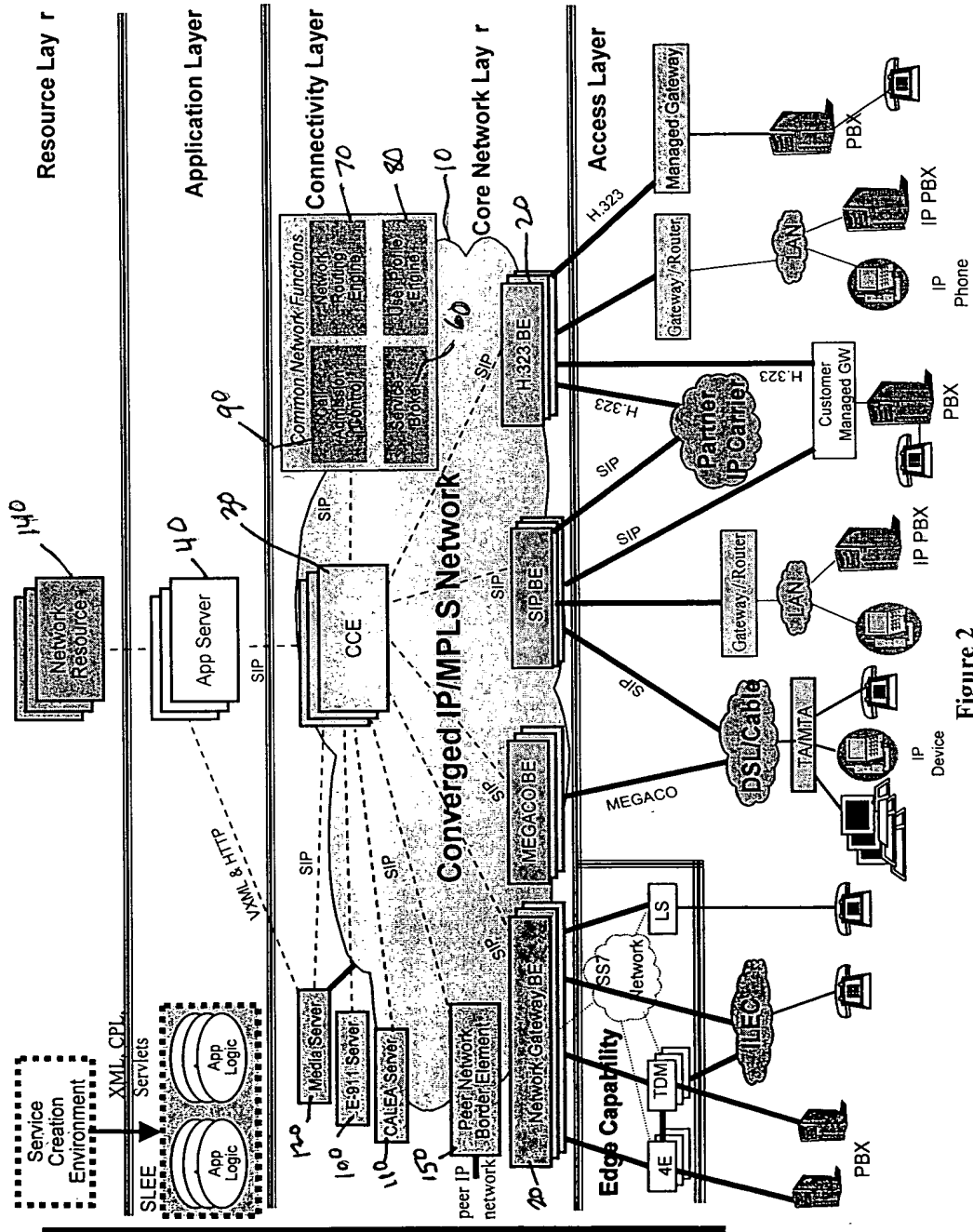Radhika R. Roy et al.
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400

START

Caller's phone is connected to the communication line using an access-specific technology and protocol — 410

Caller's phone sends the call setup signaling message using an access control protocol over an access-specific networking tehnology. — 420

The access call control protocol-specific call setup messages comes to the BE. The BE will then terminate the access-specific call control protocol and will convert into the call control protocol used among the Common Architectural entities — 430

BE will send the signaling message to the CCE for invoking the services for which the caller has asked for using the call control protocol via the phone — 440

CCE will then invoke the services invoking the application server (AS) with the help of the service broker (SB) if the call includes any services features — 450

AS may then request the CCE to set up the call-leg with the media server (MS) to provide announcement or other services should it needed in accordance to the services features should the user subscribe to. — 460

CCE will then find the destination BE with the help of the network routing engine (NRE) and route the call to the destination BE using the SIP signaling messages. — 470

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Figure 4A

AN ACCESS INDEPENDENT COMMON ARCHITECTURE FOR REAL-TIME
COMMUNICATIONS SERVICES FOR NETWORKING ENVIRONMENTS
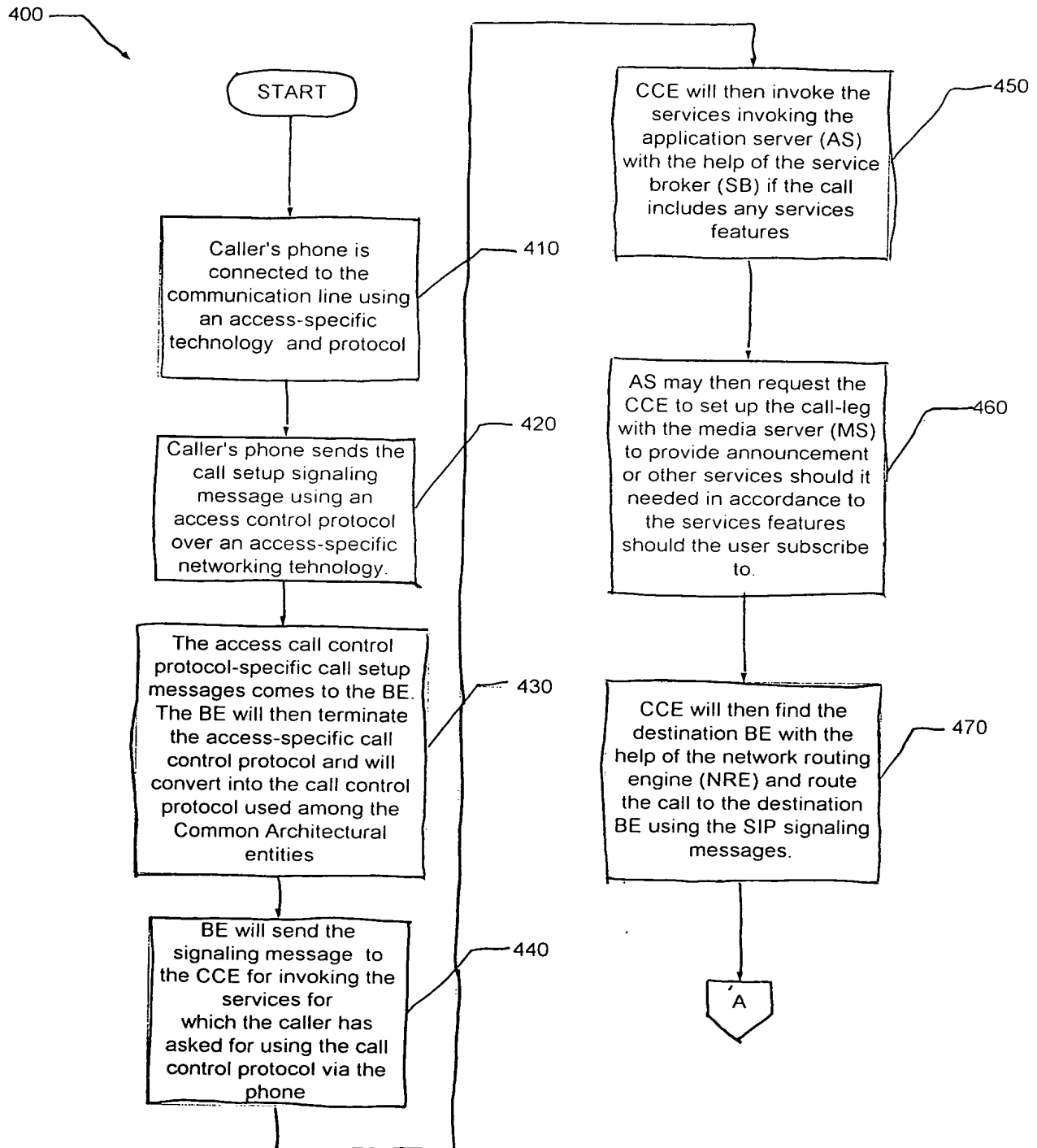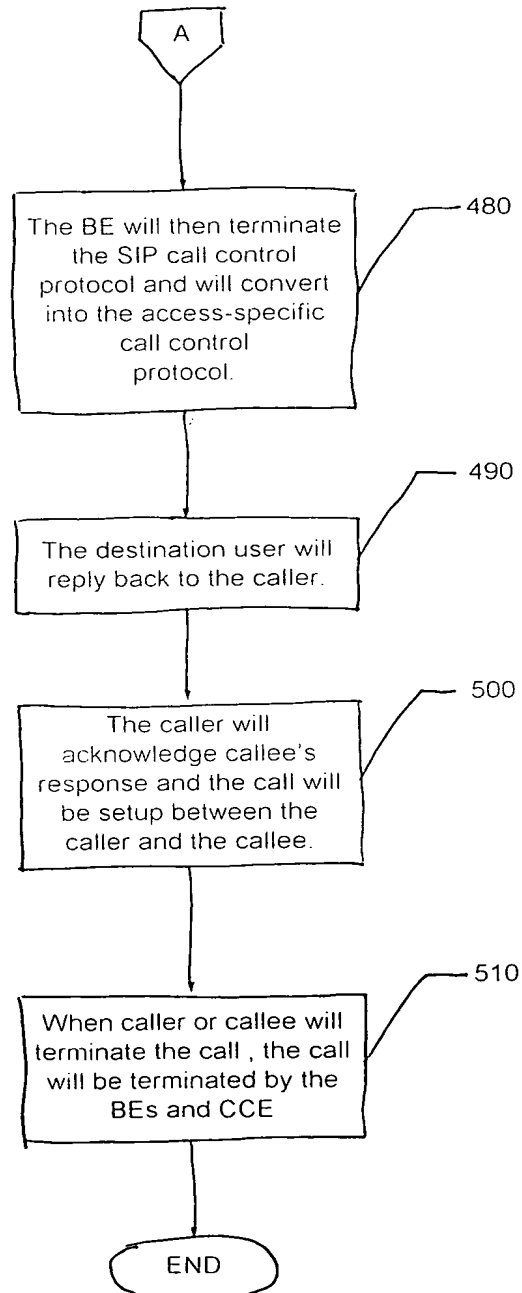Radhika R. Roy et al.
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A

The BE will then terminate the SIP call control protocol and will convert into the access-specific call control protocol. — 480

The destination user will reply back to the caller. — 490

The caller will acknowledge callee's response and the call will be setup between the caller and the callee. — 500

When caller or callee will terminate the call , the call will be terminated by the BEs and CCE — 510

END

Figure 4B